Hurdle Rates Literature Review

We compare rates of return in order to allocate our capital for maximum return. Is there a minimum hurdle rate we should use?

Making Rates Of Return Comparable

Each project's expected rate of return is masked by environmental risks. The shared risks we do not care about – e.g. comets destroying Earth – while the remaining we want to enumerate.

For example, JP Morgan and Santander differ in terms of: unit of account, and the economies where they operate. In order to compare them, we have to remove the effects of the US Dollar and Euro, and the differing growth rates of the economies in US, Europe, and South America.

Hurdle Rates

Technically, the first hurdle is the Weighted Average Cost of Capital (WACC), i.e. we need to earn more than it costs to acquire the capital. However, WACC is zero when the debt-free look to invest their saved capital.

The second is opportunity cost – could our funds be better used elsewhere? This presumes an understanding of which opportunities are available now, and which will appear in the future.

Historically-informed Opportunity Cost

Assuming that future decades will look like the past allows one to create a moving average of the investment vehicle's yield.[1] The hurdle rate is simply the current value of the moving average.

Market Yield

Alternatively, instead of looking internally to determine the hurdle rate, we can observe what others have paid for earnings and deduce the collective hurdle rate.[2] Granted, this measure seems better used as a gauge of investor sentiment: as investors grow over-confident, this hurdle rate will fall, lowering the bar to investments when we should be raising it.

Since market cycles take approximately 6 years,[3] a useful indicator might be the current implied equity risk premium ($ierp$) relative to its 20-year history, i.e. $\frac{ierp_{now}}{max(ierp) - min(ierp)}$

Another possible improvement is to use inflation or Moody's AAA rate, as the market for sovereign debt has changed[4] due to the increasing equity requirements of the Basel Accords.[5]

Observed Risk-adjusted Hurdle Rates

Practitioners use varied hurdle rates to account for risk. For example, Ben Graham doubled the Moody's AAA rate,[6] while Warren Buffett uses 15%.[7] Both have noted the significant uncertainty in determining potential returns, and use the relatively high hurdle rates in order build in a 'margin of safety'.

Note that Poterba and Summers found that CEOs of US companies (Fortune 1000) had an average hurdle rate of 12.2%[8] – in constant dollars, i.e. discounted for inflation. Their findings were replicated by Jagannathan, Meier, and Tarhan in 2011.[9]

[1] Damodaran, Aswath. Estimating Hurdle Rates. http://www.webcitation.org/6qrJdDNtL pp 99-101

[2] ibid. pp 105-8

[3] Mackenzie Investments. Bull and Bear Markets. http://www.webcitation.org/6qrJQ2eWh – 52 months per bull + 14 months per bear = 66 / 12 = 5.5 years

[4] Arslanalp, S. & Tsuda, T. IMF Econ Rev (2014) 62: 430. doi:10.1057/imfer.2014.20

[5] https://en.wikipedia.org/wiki/Basel_III

[6] John Train, The Midas Touch, ISBN 1906659184 – search for "Graham's Five Value Criteria"

[7] High-powered Investing all-in-one for Dummies, ISBN 1118724674 – search for "15 percent rule"

[8] Poterba, James M; Summers, Lawrence H. Sloan Management Review; Cambridge, Mass.37.1 (Fall 1995): 43.

[9] Ravi Jagannathan, Iwan Meier, Vefa Tarhan. 'The Cross-Section of Hurdle Rates for Capital Budgeting: An Empirical Analysis of Survey Data'. NBER Working Paper No. 16770 http://www.webcitation.org/6r0SboZ7H

Waiting Periods

Having a high hurdle rate implies sitting on cash for some time while waiting for an opportunity to arise. Given a 6-year market cycle, we can determine the minimum hurdle rate (R_h) given a market rate (R_m) for the worst case, which is sitting on cash for six of those years: $\sum_{x=1}^{12} e^{xR_m} = 6e^{6R_h} + 6$

For a 5% market return, the minimum hurdle rate would be 9.88%. For 6% market return, 11.70%; for 7%, 13.48%.

Barbell Portfolios

Hurdle rates should be applied to risk-similar investments. Should a portfolio be constructed otherwise – e.g. a barbell portfolio – the low-risk component should have one hurdle rate, while the high-risk component have another.

Summary

Practitioners have much higher hurdle rates than the market's average investor. As of 2017-05-30, the S&P500's forward earnings yield was 05.72%,[10] while practitioners require a range of 7.74%[11] - 15%. Though, given the risk of waiting periods, the lower bound should be raised to 11%.

[10] Yardeni, Ed. S&P500 Forward Earnings. http://www.webcitation.org/6qrT64riB

[11] 2 * Moody's AAA. http://www.webcitation.org/6qrL4B0ZS